WEST Search History

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DATE: Thursday, December 21, 2006

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,EPAB,JPAB,DWPI; PLUR=YES; OP=OR	
☐	L11	L8 and (putida$4 or coli$4 or pseudomon$4)	69
☐	L10	L8 and (putida$$ or coli$4 or pseudomon$4)	69
☐	L9	L7 and (putida$$ or coli$4 or pseudomon$4)	8
☐	L8	L2 and sensor$4	75
☐	L7	L1 and sensor$4	21
☐	L6	l1 and (wise or Kuske or Terwilliger).in.	4
☐	L5	l2 and (wise or Kuske or Terwilliger).in.	3
☐	L4	L3 and dmpr$4	5
☐	L3	L2 and dmp$4	46
☐	L2	transcript$4 same activ$4 same phenol$6	668
☐	L1	dmp$4 same phenol$6	700

END OF SEARCH HISTORY

=> d his full

(FILE 'HOME' ENTERED AT 16:57:16 ON 21 DEC 2006)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 16:57:41 ON 21 DEC 2006

SEA TRANSCRIPT?(S)ACTIV?(S)PHENOL?

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59 FILE AGRICOLA
2 FILE ANABSTR
2 FILE AQUALINE
7 FILE AQUASCI
42 FILE BIOENG
62 FILE BIOSIS
190 FILE BIOTECHABS
190 FILE BIOTECHDS
195 FILE BIOTECHNO
138 FILE CABA
96 FILE CAPLUS
6 FILE CEABA-VTB
1 FILE CROPU
12 FILE DDFU
50 FILE DGENE
33 FILE DISSABS
32 FILE DRUGU
5 FILE EMBAL
48 FILE EMBASE
285 FILE ESBIOBASE
6 FILE FROSTI
24 FILE FSTA
102 FILE GENBANK
1 FILE HEALSAFE
30 FILE IFIPAT
11 FILE JICST-EPLUS
5 FILE KOSMET
179 FILE LIFESCI
55 FILE MEDLINE
1 FILE NTIS
3 FILE OCEAN
164 FILE PASCAL
2 FILE PROMT
1 FILE RDISCLOSURE
57 FILE SCISEARCH
55 FILE TOXCENTER
782 FILE USPATFULL
88 FILE USPAT2
3 FILE VETU
3 FILE WATER
39 FILE WPIDS
39 FILE WPINDEX
4 FILE IPA
3 FILE NLDB

L1 QUE TRANSCRIPT?(S) ACTIV?(S) PHENOL?

D RANK

FILE 'USPATFULL, ESBIOBASE, BIOTECHNO, BIOTECHDS, LIFESCI, PASCAL, CABA, CAPLUS, USPAT2, BIOSIS, AGRICOLA, SCISEARCH, MEDLINE' ENTERED AT 17:01:03 ON 21 DEC 2006

L2 3791 SEA (TRANSCRIPT?(S) ACTIV?(S) PHENOL?) OR (DMP?(S) PHENOL?)
L3 195 SEA L2 AND SENSOR?
L4 152 SEA L3 AND (PUTIDA? OR COLI? OR PSEUDOMON?)
L5 42 SEA L4 AND DMPR?
L6 11 DUP REM L5 (31 DUPLICATES REMOVED)

D TI L6 1-11
D IBIB ABS L6 1-11

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NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	AUG 09	INSPEC enhanced with 1898-1968 archive
NEWS 4	AUG 28	ADISCTI Reloaded and Enhanced
NEWS 5	AUG 30	CA(SM)/CAplus(SM) Austrian patent law changes
NEWS 6	SEP 11	CA/CAplus enhanced with more pre-1907 records
NEWS 7	SEP 21	CA/CAplus fields enhanced with simultaneous left and right truncation
NEWS 8	SEP 25	CA(SM)/CAplus(SM) display of CA Lexicon enhanced
NEWS 9	SEP 25	CAS REGISTRY(SM) no longer includes Concord 3D coordinates
NEWS 10	SEP 25	CAS REGISTRY(SM) updated with amino acid codes for pyrrolysine
NEWS 11	SEP 28	CEABA-VTB classification code fields reloaded with new classification scheme
NEWS 12	OCT 19	LOGOFF HOLD duration extended to 120 minutes
NEWS 13	OCT 19	E-mail format enhanced
NEWS 14	OCT 23	Option to turn off MARPAT highlighting enhancements available
NEWS 15	OCT 23	CAS Registry Number crossover limit increased to 300,000 in multiple databases
NEWS 16	OCT 23	The Derwent World Patents Index suite of databases on STN has been enhanced and reloaded
NEWS 17	OCT 30	CHEMLIST enhanced with new search and display field
NEWS 18	NOV 03	JAPIO enhanced with IPC 8 features and functionality
NEWS 19	NOV 10	CA/CAplus F-Term thesaurus enhanced
NEWS 20	NOV 10	STN Express with Discover! free maintenance release Version 8.01c now available
NEWS 21	NOV 20	CAS Registry Number crossover limit increased to 300,000 in additional databases
NEWS 22	NOV 20	CA/CAplus to MARPAT accession number crossover limit increased to 50,000
NEWS 23	DEC 01	CAS REGISTRY updated with new ambiguity codes
NEWS 24	DEC 11	CAS REGISTRY chemical nomenclature enhanced
NEWS 25	DEC 14	WPIDS/WPINDEX/WPIX manual codes updated
NEWS 26	DEC 14	GBFULL and FRFULL enhanced with IPC 8 features and functionality
NEWS 27	DEC 18	CA/CAplus pre-1967 chemical substance index entries enhanced with preparation role
NEWS 28	DEC 18	CA/CAplus patent kind codes updated
NEWS 29	DEC 18	MARPAT to CA/CAplus accession number crossover limit increased to 50,000
NEWS 30	DEC 18	MEDLINE updated in preparation for 2007 reload

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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FILE 'HOME' ENTERED AT 16:57:16 ON 21 DEC 2006

=> index bioscience medicine
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
       AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
       CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
       DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 16:57:41 ON 21 DEC 2006

71 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s transcript?(s)activ?(s)phenol?
         59   FILE AGRICOLA
          2   FILE ANABSTR
          2   FILE AQUALINE
          7   FILE AQUASCI
         42   FILE BIOENG
         62   FILE BIOSIS
        190   FILE BIOTECHABS
        190   FILE BIOTECHDS
        195   FILE BIOTECHNO
  13 FILES SEARCHED...
        138   FILE CABA
         96   FILE CAPLUS
          6   FILE CEABA-VTB
          1   FILE CROPU
         12   FILE DDFU
         50   FILE DGENE
  23 FILES SEARCHED...
         33   FILE DISSABS
         32   FILE DRUGU
          5   FILE EMBAL
         48   FILE EMBASE
        285   FILE ESBIOBASE
          6   FILE FROSTI
         24   FILE FSTA
        102   FILE GENBANK
          1   FILE HEALSAFE
         30   FILE IFIPAT
  37 FILES SEARCHED...
         11   FILE JICST-EPLUS
          5   FILE KOSMET
        179   FILE LIFESCI
         55   FILE MEDLINE
          1   FILE NTIS
          3   FILE OCEAN
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       164   FILE PASCAL
  48 FILES SEARCHED...
         2   FILE PROMT
         1   FILE RDISCLOSURE
        57   FILE SCISEARCH
        55   FILE TOXCENTER
       782   FILE USPATFULL
        88   FILE USPAT2
         3   FILE VETU
         3   FILE WATER
        39   FILE WPIDS
        39   FILE WPINDEX
         4   FILE IPA
  69 FILES SEARCHED...
         3   FILE NLDB

  44 FILES HAVE ONE OR MORE ANSWERS,   71 FILES SEARCHED IN STNINDEX

L1   QUE TRANSCRIPT?(S) ACTIV?(S) PHENOL?

=> d rank
F1          782   USPATFULL
F2          285   ESBIOBASE
F3          195   BIOTECHNO
F4          190   BIOTECHABS
F5          190   BIOTECHDS
F6          179   LIFESCI
F7          164   PASCAL
F8          138   CABA
F9          102   GENBANK
F10          96   CAPLUS
F11          88   USPAT2
F12          62   BIOSIS
F13          59   AGRICOLA
F14          57   SCISEARCH
F15          55   MEDLINE
F16          55   TOXCENTER
F17          50   DGENE
F18          48   EMBASE
F19          42   BIOENG
F20          39   WPIDS
F21          39   WPINDEX
F22          33   DISSABS
F23          32   DRUGU
F24          30   IFIPAT
F25          24   FSTA
F26          12   DDFU
F27          11   JICST-EPLUS
F28           7   AQUASCI
F29           6   CEABA-VTB
F30           6   FROSTI
F31           5   EMBAL
F32           5   KOSMET
F33           4   IPA
F34           3   OCEAN
F35           3   VETU
F36           3   WATER
F37           3   NLDB
F38           2   ANABSTR
F39           2   AQUALINE
F40           2   PROMT
F41           1   CROPU
F42           1   HEALSAFE
F43           1   NTIS
F44           1   RDISCLOSURE
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=> file f1-f8, f10-f15
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         3.66       3.87

FILE 'USPATFULL' ENTERED AT 17:01:03 ON 21 DEC 2006
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FILE 'MEDLINE' ENTERED AT 17:01:03 ON 21 DEC 2006

=> s (transcript?(s)activ?(s)phenol?) or (dmp?(s)phenol?)
   4 FILES SEARCHED...
   7 FILES SEARCHED...
L2         3791 (TRANSCRIPT?(S) ACTIV?(S) PHENOL?) OR (DMP?(S) PHENOL?)

=> s l2 and sensor?
L3          195 L2 AND SENSOR?

=> s l3 and (putida? or coli? or pseudomon?)
L4          152 L3 AND (PUTIDA? OR COLI? OR PSEUDOMON?)

=> s l4 and dmpr?
L5           42 L4 AND DMPR?
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=> dup rem l5
PROCESSING COMPLETED FOR L5
L6            11 DUP REM L5 (31 DUPLICATES REMOVED)

=> d ti l6 1-11

L6   ANSWER 1 OF 11  USPATFULL on STN
TI     Phytoremediation of contaminant compounds via chloroplast genetic
       engineering

L6    ANSWER 2 OF 11  Elsevier BIOBASE  COPYRIGHT 2006 Elsevier Science B.V. on
      STN                                                  DUPLICATE
TI    Analysis of bioavailable phenols from natural samples by recombinant
      luminescent bacterial sensors

L6   ANSWER 3 OF 11  USPATFULL on STN                     DUPLICATE 2
TI     Detection of phenols using engineered bacteria

L6   ANSWER 4 OF 11  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
TI   Detection of phenols using engineered bacteria.

L6   ANSWER 5 OF 11  USPATFULL on STN                     DUPLICATE 3
TI     Detection of phenols using engineered bacteria

L6    ANSWER 6 OF 11  BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
TI    Biosensor system for analyzing substances, has cell or organism having
      DNA molecule encoding p-hydroxyphenyl-pyruvic acid dioxygenase under the
      control of a promoter inducible by the substance to be analyzed;
         microbial electrode construction by vector-mediated
         p-hydroxyphenyl-pyruvate-dioxygenase gene transfer and expression in
         Escherichia coli or Saccharomyces cerevisiae

L6   ANSWER 7 OF 11  USPATFULL on STN
TI     Biosensors

L6    ANSWER 8 OF 11  Elsevier BIOBASE  COPYRIGHT 2006 Elsevier Science B.V. on
      STN                                                  DUPLICATE
TI    Role of the DmpR-mediated regulatory circuit in bacterial
      biodegradation properties in methylphenol-amended soils

L6    ANSWER 9 OF 11  Elsevier BIOBASE  COPYRIGHT 2006 Elsevier Science B.V. on
      STN                                                  DUPLICATE
TI    Generation of novel bacterial regulatory proteins that detect priority
      pollutant phenols

L6    ANSWER 10 OF 11  BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
TI    Engineering novel biosensors to detect priority pollutant phenols;
           Pseudomonas sp. biosensor construction via polymerase chain
         reaction-mediated DmpR protein mutagenesis for use in
         phenol pollutant analysis (conference abstract)

L6    ANSWER 11 OF 11  Elsevier BIOBASE  COPYRIGHT 2006 Elsevier Science B.V.
      on STN                                               DUPLICATE
TI    Sensing of aromatic compounds by the DmpR
      transcriptional activator of phenol
      -catabolizing Pseudomonas sp. strain CF600


=> d ibib abs l6 1-11

L6   ANSWER 1 OF 11  USPATFULL on STN
ACCESSION NUMBER:       2006:113026  USPATFULL
TITLE:                  Phytoremediation of contaminant compounds via
                        chloroplast genetic engineering
```

INVENTOR(S): Daniell, Henry, Winter Park, FL, UNITED STATES
PATENT ASSIGNEE(S): University of Central Florida, Orlando, FL, UNITED STATES, 32816-3551 (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2006095982	A1	20060504	
APPLICATION INFO.:	US 2003-520204	A1	20030702	(10)
	WO 2003-US20868		20030702	
			20050826	PCT 371 date

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-393451P	20020703 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: SALIWANCHIK LLOYD & SALIWANCHIK, A PROFESSIONAL ASSOCIATION, PO BOX 142950, GAINESVILLE, FL, 32614-2950, US
NUMBER OF CLAIMS: 40
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 15 Drawing Page(s)
LINE COUNT: 3013
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A plastid transformation vector for stably transforming a plastid genome, comprising, as operably-linked components, a first flanking sequence, at least one DNA sequence coding for a polypeptide suitable for remediating a contaminant compound, and a second flanking sequence, wherein a plant is stably transformed with the plastid transformation vector, and the plant is capable of phytoremediating a contaminant compound.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 2 OF 11 Elsevier BIOBASE COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE

ACCESSION NUMBER: 2006207256 ESBIOBASE
TITLE: Analysis of bioavailable phenols from natural samples by recombinant luminescent bacterial sensors
AUTHOR: Leedjarv A.; Ivask A.; Virta M.; Kahru A.
CORPORATE SOURCE: A. Leedjarv, National Institute of Chemical Physics and Biophysics, Laboratory of Molecular Genetics, Akadeemia tee 23, 12618 Tallinn, Estonia. E-mail: anul@kbfi.ee
SOURCE: Chemosphere, (2006), 64/11 (1910-1919), 37 reference(s)
CODEN: CMSHAF ISSN: 0045-6535
PUBLISHER ITEM IDENT.: S0045653506000646
DOCUMENT TYPE: Journal; Article
COUNTRY: United Kingdom
LANGUAGE: English
SUMMARY LANGUAGE: English

AB A whole-cell recombinant bacterial sensor for the detection of phenolic compounds was constructed and used for the analysis of bioavailable phenols in natural samples. The sensor Pseudomonas fluorescens OS8(pDNdmpRlux) contains luxCDABE operon as a reporter under the control of phenol-inducible Po promoter from Pseudomonas sp. CF600. Expression of lux genes from the Po promoter, and thus the production of bioluminescence is controlled by the transcriptional activator DmpR, which initiates transcription in the presence of phenolic compounds. To take into account possible quenching (turbidity, toxicity) and/or stimulating effects of the environmental samples on the bacterial luminescence, control bacteria comparable to the sensors but lacking the phenol recognising elements were constructed and

used in parallel in assays. The sensor bacteria were inducible with phenol, methylphenols, 2,3-, 2,4-, 2,6- and 3,4-dimethylphenol, resorcinol and 5-methylresorcinol but not with 2,5-dimethylresorcinol. The detection limits for different phenols varied from 0.03 mg/l (2-methylphenol) to 42.7 mg/l (5-methylresorcinol), being 0.08 mg/l for phenol, the most abundant phenolic contaminant in the environment. Different phenolic compounds had an additive effect on the inducibility of the sensor. The constructed sensor bacteria were applied on groundwaters and semi-coke leachates to estimate the bioavailable fraction of phenols. The sensor -determined amount of phenols in different samples varied from 6% to 95% of total phenol content depending on the nature of the sample. As the phenol-recognising unit in the sensor originates from a natural phenol biodegradation pathway, the sensor-determined amount of phenols corresponds to the biodegradable amount of phenolic pollutants in the samples and therefore this sensor could be used to estimate the natural biodegradation potential of phenolic compounds in the complex environmental mixtures and matrixes.

L6 ANSWER 3 OF 11 USPATFULL on STN DUPLICATE 2

ACCESSION NUMBER: 2005:298937 USPATFULL
TITLE: Detection of phenols using engineered bacteria
INVENTOR(S): Wise, Arlene A., Philadelphia, PA, UNITED STATES
Kuske, Cheryl R., Los Alamos, NM, UNITED STATES
Terwilliger, Thomas C., Santa Fe, NM, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005260602	A1	20051124
APPLICATION INFO.:	US 2003-665455	A1	20030918 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 2000-520538, filed on 8 Mar 2000, GRANTED, Pat. No. US 6773918

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-123659P	19990309 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: UNIVERSITY OF CALIFORNIA, LOS ALAMOS NATIONAL LABORATORY, P.O. BOX 1663, MS A187, LOS ALAMOS, NM, 87545, US
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Page(s)
LINE COUNT: 777
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Detection of phenols using engineered bacteria. A biosensor can be created by placing a reporter gene under control of an inducible promoter. The reporter gene produces a signal when a cognate transcriptional activator senses the inducing chemical. Creation of bacterial biosensors is currently restricted by limited knowledge of the genetic systems of bacteria that catabolize xenobiotics. By using mutagenic PCR to change the chemical specificity of the Pseudomonas species CF600 DmpR protein, the potential for engineering novel biosensors for detection of phenols has been demonstrated. DmpR, a well-characterized transcriptional activator of the P. CF600's dmp operon mediates growth on simple phenols. Transcription from Po, the promoter heading the dmp operon, is activated when the sensor domain of DmpR interacts with phenol and mono-substituted phenols. By altering the sensor

domain of the DmpR, a group of DmpR derivatives that activate transcription of a Po-lacZ fusion in response to eight of the EPA's eleven priority pollutant phenols has been created. The assays and the sensor domain mutations that alter the chemical specificity of DmpR is described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 11 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2004:353465 BIOSIS
DOCUMENT NUMBER: PREV200400355149
TITLE: Detection of phenols using engineered bacteria.
AUTHOR(S): Wise, Arlene A. [Inventor, Reprint Author]; Kuske, Cheryl R. [Inventor]; Terwilliger, Thomas C. [Inventor]
CORPORATE SOURCE: Los Alamos, NM, USA
ASSIGNEE: The Regents of the University of California
PATENT INFORMATION: US 6773918 20040810
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Aug 10 2004) Vol. 1285, No. 2. http://www.uspto.gov/web/menu/patdata.html. e-file. ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 26 Aug 2004
Last Updated on STN: 26 Aug 2004

AB Detection of phenols using engineered bacteria. A biosensor can be created by placing a reporter gene under control of an inducible promoter. The reporter gene produces a signal when a cognate transcriptional activator senses the inducing chemical. Creation of bacterial biosensors is currently restricted by limited knowledge of the genetic systems of bacteria that catabolize xenobiotics. By using mutagenic PCR to change the chemical specificity of the Pseudomonas species CF600 DmpR protein, the potential for engineering novel biosensors for detection of phenols has been demonstrated. DmpR, a well-characterized transcriptional activator of the P. CF600's dmp operon mediates growth on simple phenols. Transcription from Po, the promoter heading the dmp operon, is activated when the sensor domain of DmpR interacts with phenol and mono-substituted phenols. By altering the sensor domain of the DmpR, a group of DmpR derivatives that activate transcription of a Po-lacZ fusion in response to eight of the EPA's eleven priority pollutant phenols has been created. The assays and the sensor domain mutations that alter the chemical specificity of DmpR is described.

L6 ANSWER 5 OF 11 USPATFULL on STN DUPLICATE 3
ACCESSION NUMBER: 2002:301093 USPATFULL
TITLE: Detection of phenols using engineered bacteria
INVENTOR(S): Wise, Arlene A., Los Alamos, NM, UNITED STATES
Kuske, Cheryl R., Los Alamos, NM, UNITED STATES
Terwilliger, Thomas C., Santa Fe, NM, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2002168636	A1	20021114	
	US 6773918	B2	20040810	
APPLICATION INFO.:	US 2000-520538	A1	20000308	(9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-123659P	19990309 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Samuel M Freund, LC/BPL MS D412, Los Alamos National

Laboratory, P O Box 1663, Los Alamos, CA, 87545
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Page(s)
LINE COUNT: 781
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Detection of phenols using engineered bacteria. A biosensor can be created by placing a reporter gene under control of an inducible promoter. The reporter gene produces a signal when a cognate transcriptional activator senses the inducing chemical. Creation of bacterial biosensors is currently restricted by limited knowledge of the genetic systems of bacteria that catabolize xenobiotics. By using mutagenic PCR to change the chemical specificity of the Pseudomonas species CF600 DmpR protein, the potential for engineering novel biosensors for detection of phenols has been demonstrated. DmpR, a well-characterized transcriptional activator of the P. CF600's dmp operon mediates growth on simple phenols. Transcription from Po, the promoter heading the dmp operon, is activated when the sensor domain of DmpR interacts with phenol and mono-substituted phenols. By altering the sensor domain of the DmpR, a group of DmpR derivatives that activate transcription of a Po-lacZ fusion in response to eight of the EPA's eleven priority pollutant phenols has been created. The assays and the sensor domain mutations that alter the chemical specificity of DmpR is described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 6 OF 11 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2002-19707 BIOTECHDS
TITLE: Biosensor system for analyzing substances, has cell or organism having DNA molecule encoding p-hydroxyphenyl-pyruvic acid dioxygenase under the control of a promoter inducible by the substance to be analyzed;
microbial electrode construction by vector-mediated p-hydroxyphenyl-pyruvate-dioxygenase gene transfer and expression in Escherichia coli or Saccharomyces cerevisiae
AUTHOR: SCHLEDZ M
PATENT ASSIGNEE: GREENOVATION BIOTECH GMBH
PATENT INFO: WO 2002053772 11 Jul 2002
APPLICATION INFO: WO 2000-EP13231 28 Dec 2000
PRIORITY INFO: EP 2000-128593 28 Dec 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-557745 [59]
AN 2002-19707 BIOTECHDS
AB DERWENT ABSTRACT:
NOVELTY - Biosensor system (I), comprising a cell or organism harboring a DNA molecule enabling the cell or organism to express p-hydroxyphenyl-pyruvic acid dioxygenase (HPD) (II) under the control of a promoter which is inducible by the presence of substances or conditions to be analyzed, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: (1) an isolated DNA molecule (III) comprising a nucleotide sequence providing an expression cassette capable of directing the expression of (II), where the expression cassette comprises, from 5' to 3', an inducible promoter capable of expressing a downstream coding sequence, a DNA sequence coding for the expression of (II), and a 3' termination sequence characterized in that the inducible promoter (P) is selected from zntZ, cadA, merA, nic, Chr, ark, fliC, corA, dmpR , xylR, xylS, pqiAB, SoxRS, zrt, zip, ycf1, cup1-1, cup1-2, gef1, ftr1, hal1, gre1, and aad4; (2) a plasmid or vector system comprising (III);

(3) a transgenic cell or organism containing (III); and (4) studying and/or monitoring the activity of a promoter or its functional part, comprising: (a) using a vector which comprises a DNA sequence coding for (II) under the control of the promoter or its functional part and a transcriptional terminator, where the DNA sequence is, for the transformation of a host cell or organism; (b) cultivating the transformants; and (c) monitoring the activity of the promoter or its functional part by measuring the content of ochronotic pigment accumulated in the culture medium.

BIOTECHNOLOGY - Preferred Biosensor: (P) is zntA, cadA, merA, nic, chr, ars, fliC, corA, dmpR, xylR, xylS, pquAB, SoxRS, zrt, zip, ycf1, cup1-1, cup1-2, gef1, ftr1, hal1, gre1 and aad4. The cell or organism is procaryotic (e.g. Escherichia coli) or eukaryotic (e.g. yeast such as Saccharomyces cerevisiae).

USE - (I) is useful for detecting the presence and quantity of a substance (e.g. air, water and soil contaminants, toxins and toxic compounds, zinc, cadmium, mercury, lead, nickel, chrome, arsenic, iron, copper, aluminum, manganese, cobalt, phenols, benzene and paraquat) or conditions (salt, osmotic and oxidative stress conditions) to be analyzed, by incubating (I) with the substance and detecting the presence and quantity of the substance photometrically (claimed). (I) is also useful for evaluating the presence and quantity of chemical substances desired to be analyzed. (I) is useful for analyzing DNA-protein interactions by a one-hybrid assay, receptor-based ligand-affinity screening, and for detecting vitality during of an organism during cultivation, e.g. fermentation.

ADVANTAGE - (I) enables quick, reliable and low cost analyses. The quantification of ochronotic pigment is in proportion to cellular RNA levels of hpd and can easily be performed in the cell culture medium. The sensor is a quantitative and an easy-to-handle system. A measurement of promoter activity is achieved without lysing transformed cells. Kinetics of the gene expression can easily and repeatedly be studied by sampling the same cultures. After assaying for hpd activity, transformed cells can be further studied using other methods, e.g. Northern blots, RNAse protection assays or Western Blots. Sample collection can be automated by using cultures grown in e.g. 96-well plates. The system thus enables high-throughput screenings.

EXAMPLE - P-hydroxyphenyl-pyruvic acid dioxygenase (Hpd) gene from Arabidopsis was amplified from an A. thaliana Matchmaker cDNA library by proof-reading polymerase chain reaction (PCR) using the primers hpd (5'-TGAAATCCATGGGCCACCAAAACGCCGCCGTT-3') and hpd (5'-TCTTCTTGTGGATCCCACTAACTGTTTGGC-3'). The 1355 base pair PCR-fragment was digested with NcoI and BamHI and inserted into pQE60 which had been digested with the same enzymes. The resulting plasmid pHPDQE was transformed into Escherichia coli strain JM109. For overexpression of HPD, log-phase JM109 (OD600 = 0,7) cells were induced by adding 500 micro-M IPTG (isopropyl-beta-D-thiogalactopyranoside), grown for 5 hours at 27 degrees C and then harvested. Because of the 3'-terminal fusion between the hpd-coding sequence and His6-codons of the vector, HPD was purified by Talon metal affinity chromatography. (62 pages)

L6 ANSWER 7 OF 11 USPATFULL on STN

ACCESSION NUMBER:	2001:226426 USPATFULL		
TITLE:	Biosensors		
INVENTOR(S):	Schneider, Rene, Microbiology, Australia Vancov, Tony, Euguna, Australia Jury, Karen, Norwich, United Kingdom		
PATENT ASSIGNEE(S):	CRC for Waste Management and Pollution Control Limited, Kensington, Australia (non-U.S. corporation)		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6329160	B1	20011211
	WO 9804716		19980205

APPLICATION INFO.: US 1999-230288 19990907 (9)
WO 1997-AU473 19970725
19990907 PCT 371 date
19990907 PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	AU 1996-1280	19960729

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Le, Long V.
ASSISTANT EXAMINER: Pham, Minh-Quan K.
LEGAL REPRESENTATIVE: Browdy and Neimark
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 1019
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A genetic construct for use in a biosensor comprising: (a) a first nucleic acid molecule including a sequence encoding a reporter molecule having a detectable activity; and (b) a second nucleic acid molecule including a sequence encoding an enzyme which produces a substrate for the reporter molecule, the first sequence being under the control of a first inducible promoter and the second sequence being under the control of a second inducible promoter. A biosensor for measuring an environmental signal comprising a cell including the genetic construct and a means for measuring the activity of the reporter molecule in the cell when the cell has been exposed to the environmental signal.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 8 OF 11 Elsevier BIOBASE COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE

ACCESSION NUMBER: 2001010563 ESBIOBASE
TITLE: Role of the DmpR-mediated regulatory circuit in bacterial biodegradation properties in methylphenol-amended soils
AUTHOR: Sarand I.; Skarfstad E.; Forsman M.; Romantschuk M.; Shingler V.
CORPORATE SOURCE: V. Shingler, Dept. of Cell and Molecular Biology, Umea University, S-901 87 Umea, Sweden.
E-mail: victoria.shingler@cmb.umu.se
SOURCE: Applied and Environmental Microbiology, (2001), 67/1 (162-171), 53 reference(s)
CODEN: AEMIDF ISSN: 0099-2240
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Pathway substrates and some structural analogues directly activate the regulatory protein DmpR to promote transcription of the drop operon genes encoding the (methyl) phenol degradative pathway of Pseudomonas sp. strain CF600. While a wide range of phenols can activate DmpR, the location and nature of substituents on the basic phenolic ring can limit the level of activation and thus utilization of some compounds as assessed by growth on plates. Here we address the role of the aromatic effector response of DmpR in determining degradative properties in two soil matrices that provide different nutritional conditions. Using the wild-type system and an isogenic counterpart containing a DrapR mutant with enhanced ability to respond to para-substituted phenols, we demonstrate (i) that the enhanced in vitro biodegradative capacity of the regulator mutant strain is manifested in the two different soil types and (it) that exposure of the wild-type strain to 4-methylphenol-contaminated soil led

to rapid selection of a subpopulation exhibiting enhanced capacities to degrade the compound. Genetic and functional analyses of 10 of these derivatives demonstrated that all harbored a single mutation in the sensory domain of DmpR that mediated the phenotype in each case. These findings establish a dominating role for the aromatic effector response of DmpR in determining degradation properties. Moreover, the results indicate that the ability to rapidly adapt regulator properties to different profiles of polluting compounds may underlie the evolutionary success of DmpR-like regulators in controlling aromatic catabolic pathways.

L6 ANSWER 9 OF 11 Elsevier BIOBASE COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE

ACCESSION NUMBER: 2000012777 ESBIOBASE
TITLE: Generation of novel bacterial regulatory proteins that detect priority pollutant phenols
AUTHOR: Wise A.A.; Kuske C.R.
CORPORATE SOURCE: C.R. Kuske, Envtl. Molecular Biology Group, Biosciences Division, Los Alamos National Laboratory, Los Alamos, NM 87545, United States.
E-mail: kuske@lanl.gov
SOURCE: Applied and Environmental Microbiology, (2000), 66/1 (163-169), 41 reference(s)
CODEN: AEMIDF ISSN: 0099-2240
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The genetic systems of bacteria that have the ability to use organic pollutants as carbon and energy sources can be adapted to create bacterial biosensors for the detection of industrial pollution. The creation of bacterial biosensors is hampered by a lack of information about the genetic systems that control production of bacterial enzymes that metabolize pollutants. We have attempted to overcome this problem through modification of DmpR, a regulatory protein for the phenol degradation pathway of Pseudomonas sp. strain CF600. The phenol detection capacity of DmpR was altered by using mutagenic PCR targeted to the DmpR sensor domain. DmpR mutants were identified that both increased sensitivity to the phenolic effectors of wild-type DmpR and increased the range of molecules detected. The phenol detection characteristics of seven DmpR mutants were demonstrated through their ability to activate transcription of a lacZ reporter gene. Effectors of the DmpR derivatives included phenol, 2- chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methylphenol, 2,4- dimethylphenol, 2-nitrophenol, and 4-nitrophenol.

L6 ANSWER 10 OF 11 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN

ACCESSION NUMBER: 1999-00451 BIOTECHDS
TITLE: Engineering novel biosensors to detect priority pollutant phenols;
Pseudomonas sp. biosensor construction via polymerase chain reaction-mediated DmpR protein mutagenesis for use in phenol pollutant analysis (conference abstract)
AUTHOR: Wise A; Kuske C
CORPORATE SOURCE: Los-Alamos-Nat.Lab.
LOCATION: Los Alamos National Laboratory, Los Alamos, NM, USA.
SOURCE: Abstr.Gen.Meet.Am.Soc.Microbiol.; (1998) 98 Meet., 290
CODEN: 0005P
ISSN: 0067-2777
98th General Meeting of the American Society for Microbiology, Atlanta, GA, USA, 17-21 May, 1998.
DOCUMENT TYPE: Journal

LANGUAGE: English
AN 1999-00451 BIOTECHDS
AB Bacterial biosensors can be a cost-effective means of detecting industrial pollution. Bacterial biosensors use transcriptional activators which activator a reporter gene (which gives a measurable signal) when contacted with the inducing chemical, but, many pollutants cannot be detected by a known transcriptional activator and so this limits the creation of bacterial biosensors. In this study an attempt was made to engineer novel biosensors. Mutagenic polymerase chain reaction was used to alter the chemical specificity of the Pseudomonas sp. CF600 DmpR protein. DmpR is a well characterized transcriptional activator of CF600's dmp operon and it mediates growth on simple phenols. Po, the promoter heading the dmp operon and transcription from this point was activated when domain-A (sensor domain) of DmpR interacted with phenol, monomethylated phenol and mono-chlorinated phenol. A set of DmpR derivatives was created via modification of the DmpR sensor domain and these derivatives activated transcription of a Po-lacZ fusion in response to 8 of the 11 priority pollutant phenols regulated by the Environmental Protection Agency. (0 ref)

L6 ANSWER 11 OF 11 Elsevier BIOBASE COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE
ACCESSION NUMBER: 1994074964 ESBIOBASE
TITLE: Sensing of aromatic compounds by the DmpR transcriptional activator of phenol-catabolizing Pseudomonas sp. strain CF600
AUTHOR: Shingler V.; Moore T.
CORPORATE SOURCE: V. Shingler, Department of Cell/Molecular Biology, University of Umea, S-901 87 Umea, Sweden.
SOURCE: Journal of Bacteriology, (1994), 176/6 (1555-1560) CODEN: JOBAAY ISSN: 0021-9193
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The dmp operon of the pVI150 catabolic plasmid of Pseudomonas sp. strain CF600 encodes the enzymes involved in the catabolism of phenol and methylphenols. The regulator of this dmp pathway, DmpR, is a member of the NtrC family of transcriptional activators and controls transcription of the dmp operon in response to aromatic effector compounds (V. Shingler, M. Bartilson, and T. Moore, J. Bacteriol. 175:1596-1604, 1993). Using a lux gene fusion reporter system, in which the DmpR-regulated operon promoter controls the expression of luciferase activity, we have shown in the study reported here that DmpR is activated by, but responds differentially to, the presence of a wide range of aromatic compounds. In many microbial regulatory systems, including some members of the NtrC family, the response to environmental fluctuations involves information transfer from surface sensory proteins to transcriptional regulators. However, DmpR-mediated activation of phenol metabolism in response to aromatic compounds occurs in the absence of a specific sensory protein. We used hybrids between DmpR and XylR, a structurally related regulator of toluene and xylene metabolism, to demonstrate that it is the amino-terminal domains of these regulators that determine the specificity of transcriptional activation. The results suggest that it is the direct interaction of aromatic compounds with the DmpR and XylR proteins that regulates their transcriptional promoting activity.

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     CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
     DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 16:57:41 ON 21 DEC 2006
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             190   FILE BIOTECHDS
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             138   FILE CABA
              96   FILE CAPLUS
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               1   FILE CROPU
              12   FILE DDFU
              50   FILE DGENE
              33   FILE DISSABS
              32   FILE DRUGU
               5   FILE EMBAL
              48   FILE EMBASE
             285   FILE ESBIOBASE
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              24   FILE FSTA
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               1   FILE RDISCLOSURE
              57   FILE SCISEARCH
              55   FILE TOXCENTER
             782   FILE USPATFULL
              88   FILE USPAT2
               3   FILE VETU
               3   FILE WATER
              39   FILE WPIDS
              39   FILE WPINDEX
               4   FILE IPA
               3   FILE NLDB
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FILE STNINDEX

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 21 Dec 2006 (20061221/PD)
FILE LAST UPDATED: 21 Dec 2006 (20061221/ED)
HIGHEST GRANTED PATENT NUMBER: US7152245
HIGHEST APPLICATION PUBLICATION NUMBER: US2006288461
CA INDEXING IS CURRENT THROUGH 21 Dec 2006 (20061221/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 21 Dec 2006 (20061221/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2006
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2006


FILE ESBIOBASE
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FILE COVERS 1994 TO DATE.

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>>>  BIOTECHNO IS NO LONGER BEING UPDATED AS OF 2004  <<<

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FILE LAST UPDATED: 21 DEC 2006       <20061221/UP>
FILE COVERS 1982 TO DATE

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FILE LIFESCI
FILE COVERS 1978 TO 10 Nov 2006 (20061110/ED)

FILE PASCAL
FILE LAST UPDATED: 18 DEC 2006       <20061218/UP>
FILE COVERS 1977 TO DATE.

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    IN THE BASIC INDEX (/BI) FIELD  <<<

FILE CABA
FILE COVERS 1973 TO 6 Dec 2006 (20061206/ED)

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